

**REMARKS**

Claims 1-45 are pending. Claims 1-18, 21, 23-39, 42, 44, and 45 stand rejected under 35 U.S.C. § 103(a). Claims 9, 17-19, and 22 stand rejected under 35 U.S.C. § 112, second paragraph. Claims 4, 5, 18, 22, 26, 27, 32, 39, and 42 and the drawings are objected to. Claims 20, 40, 41, and 43 are believed to be allowable and claims 19 and 22 are believed to recite allowable subject matter, *mutatis mutandis*.

Claims 1-3, 14, 18, 21, 23-25, 32, 39, 44, and 45 have been amended and claims 4 and 26 have been canceled without prejudice as shown in the Status of the Claims section, *supra*. Accordingly, after entry of this Amendment, the pending claims are claims 1-3, 5-25, and 27-45. No new matter has been added.

**SECTION 112, SECOND PARAGRAPH REJECTIONS**

The Examiner has rejected claims 9, 17-19, and 22 under 35 U.S.C. § 112, second paragraph for failing to particularly point out and distinctly claim the subject matter of the invention. More particularly, the Examiner has requested clarification as to the structure corresponding to claim terms.

Specifically, the "means for sweeping the wavelength" in claim 9 is disclosed on page 8 between lines 1 and 3 of International Application Publication Number WO 2004/083820, *et seq.* The "means for causing said radiation to emit at discrete wavelengths" in claim 17 is disclosed, for example as a controller card (36) and/or a tunable laser (1). See, e.g., WO 2004/083820, page 6, lines 15-32. The "means for controlling a temperature" in

claim 18 refers, for example, to a heating element (42) and a heat control unit (43). See, e.g., Id., page 7, lines 12-18. The means or step for "dynamically varying spacing" in claims 19 and 40 and the means "for varying spacing of said reflective surfaces" in claims 22 can refer, for example, to a computer (34), a control card (36), adjustors (23 and 24), and a piezoelectric controller (37). See, e.g., Id., page 6, line 25 to page 7, line 32.

#### OBJECTIONS TO THE CLAIMS

##### Claims 4, 5, 26, 27, and 42

Claims 4, 5, 26, 27, and 42 are objected to under 37 CFR § 1075(c) as being in improper dependent form. More specifically, the Examiner alleges that the claims do not further limit the subject matter of the claim(s) from which they depend.

Claims 4 and 26 have been canceled without prejudice. Claims 5 and 27 recite that the capturing materials, which is part of the system, are DNA or protein, which are limitations on the "capturing material". Withdrawal of the grounds for objection is respectfully requested. Claim 42 recites that the reflective surface with the capturing material also includes an added dielectric layer with respect to the reflective surface that does not have the capturing material on it. The "added dielectric layer" is a further limitation to claim 25. Accordingly, withdrawal of the grounds for objection is respectfully requested.

Claims 18 and 39

Claims 18 and 39 are objected to as being improper. Claims 18 and 39 have been amended. Consequently the grounds for rejection are believed to be moot. Withdrawal of the grounds for objection is respectfully requested.

Claim 22

Claim 22 is objected to under 37 CFR § 1.75(c) as being substantially duplicative of claim 19. The Applicants respectfully disagree. Claim 19 recites dynamically varying the spacing between "first and second surfaces" whereas claim 22 recites varying the spacing between "reflective surfaces". The "reflexive surfaces" of claim 22 correspond to the first and second reflective surfaces (14, 15) whereas the first and second surfaces of claim 19 also could correspond to the mirror (14) and the capturing material (90) as shown in FIG. 4. Accordingly, withdrawal of the grounds for objection is respectfully requested.

Claim 32

Claim 32 is objected to on grounds of grammar. Claim 32 has been amended. Accordingly, withdrawal of the grounds for objection is respectfully requested.

OBJECTIONS TO THE DRAWINGS

Objections to the drawings have been raised. In response thereto, the Applicants respond that "the plurality of regions in a pattern of an array . . . defining a resonant cavity" are shown in FIG. 2 and FIG. 10A, which show regions in a pattern of an

array" and FIG. 4, which shows the reflective surfaces (14 and 15), capturing material (90) at a single Cell and the resonant cavity (16). Accordingly, withdrawal of the grounds for objection to the drawings is respectfully requested.

With respect to claims 10 and 11, referring to FIG. 1, lens 7 and 10 operate to condense the beam to a focal point (9) and to expand the beam from the focal point (9). Focusing lens (31) also is shown to condense and to expand a beam (30). Accordingly, withdrawal of the grounds for objection to the drawings is respectfully requested.

With respect to claim 20, referring to FIG. 1, independent upper (22) and lower supports (17) are shown having dedicated adjustors (23 and 14, and 25, respectively). Capturing material is only required on one of the reflective surfaces. Hence, whichever reflective surface does not include capturing material reads on to the claim. Accordingly, withdrawal of the grounds for objection to the drawings is respectfully requested.

#### SECTION 103(a) REJECTIONS

Claims 1-7, 10-16, 21, 23-29, 32-37, 42, 44, and 45 stand rejected under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent Number 5,982,534 to Pinkel, et al ("Pinkel") in view of U.S. Patent Application Number 2002/0068018 to Pepper ("Pepper"); claims 8, 9, 17, 30, 31, and 38 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Pinkel and Pepper, further in view of U.S. Patent Number 4,917,462 to Lewis ("Lewis"); and claims 18 and 39 stand rejected under 35 U.S.C. § 103(a) as unpatentable over

Pinkel and Pepper, further in view of U.S. Patent Number 5,851,488 to Saul, et al. ("Saul").

Claims 1-7, 10-16, 21, 23-29, 32-37, 42, 44, and 45

Pinkel discloses an illumination apparatus that includes reflective surfaces between which a specimen can be disposed and illuminated. The Examiner maintains that the "plurality of regions" feature of the independent claims is not bound or defined by structure and, as a result, such "regions" exist in Pinkel. In view of the above amendments, the Applicants respectfully disagree.

Each of independent claims 1, 2, 23, 24, 44, and 45 recites a plurality of regions in a pattern of an array made from a capturing material, each of which defines a cavity or a resonant cavity. The corresponding structure is described in WO 2004/083820 between line 15 on page 9 and line 2 on page 10 and is shown in FIGs. 2-4. The regions can include a plurality of cells (80) that are applied to the surface of the mirror (14) as well as light emitter patterns. A thin layer of a capturing material (90) also can be applied to the cell (80).

In short, the structural elements/limitations of the claim language include: a pattern of an array made from a capturing material, which defines a plurality of cells, further defining a unique resonant cavity. Pinkel does not teach, mention or suggest having or applying a capturing material in a pattern of an array on one of the reflective surfaces forming the channel.

The Examiner alleges that such regions can be said to exist in the space between the first and second surfaces (303, 305) of Pinkel because, in the claims, the "regions are not bound/defined

by any specific structural elements/limitations." The Applicants respectfully disagree.

The capturing material itself constitutes structure. Furthermore, the capturing material is disposed on one or the other of the reflective surfaces "in a pattern of an array", which is additional structure.

The Pepper reference also does not teach, mention or suggest having or applying a capturing material in a pattern of an array on one of the reflective surfaces forming the channel. Accordingly, the Applicants maintain that independent claims 1, 2, 23, 24, 44 and 45 and all claims depending therefrom satisfy all of the requirements of 35 U.S.C. § 101, et seq. -- especially § 103(a) -- and are in condition for allowance. Withdrawal of the grounds for rejection is respectfully requested.

Claims 8, 9, 17, 30, 31, and 38

The shortcomings of Pinkel and Pepper have been discussed above. Nor can Lewis make up for these shortcomings. The Lewis reference does not teach, mention or suggest having or applying a capturing material in a pattern of an array on one of the reflective surfaces forming the channel. Accordingly, the Applicants maintain that claims 8, 9, 17, 30, 31, and 38 satisfy all of the requirements of 35 U.S.C. § 101, et seq. -- especially § 103(a) -- and are in condition for allowance. Withdrawal of the grounds for rejection is respectfully requested.

Claims 18 and 39

Nor can Saul make up for these shortcomings. The Saul reference does not teach, mention or suggest having or applying a

capturing material in a pattern of an array on one of the reflective surfaces forming the channel. Accordingly, the Applicants maintain that claims 18 and 39 satisfy all of the requirements of 35 U.S.C. § 101, et seq. -- especially § 103(a) -- and are in condition for allowance. Withdrawal of the grounds for rejection is respectfully requested.

The Examiner is encouraged to telephone the undersigned attorney to discuss any matter that would expedite allowance of the present application.

Respectfully submitted,

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